WISCONSIN ENDANGERED RESOURCES REPORT #___132_____
STATUS OF THE TIMBER WOLF IN WISCONSIN
PERFORMANCE REPORT 1 JULY 2004 THROUGH 30 JUNE 2005

By Adrian P. Wydeven and Jane E. Wiedenhoeft

SUMMARY

This report covers activities conducted from 1 July 2004 through 30 June 2005, on wolf conservation in Wisconsin. The Wisconsin DNR reclassified wolves from endangered to threatened in 1999, and delisted wolves to protected wild animals on August 1, 2004. The U. S. Fish and Wildlife Service downlisted wolves to threatened on 1 April 2003, and although work was started to completely delist wolves in 2004, a federal district court ruling in Oregon on 31 January 2005 caused Wisconsin wolves to be re-listed as endangered. The 1999 Wisconsin Wolf Management Plan determined wolf management in the state, and this report follows the outline of the wolf plan to describe wolf management activities.

Thirty-one wolves were live-captured, and 22 were fitted with radio collars in 2004 in 18 different packs. Sixty-four radio tagged wolves were monitored during the study period. Mean territory size was 37 square miles for 27 adult wolves. The minimum count for the wolf population in winter 2004-2005 was 425 to 455 wolves in 108 packs, and included 414 - 442 wolves outside of Indian reservations. Eleven wolves being actively monitored died during the period from the following mortality factors: 3 from disease, 1 other wolves, 4 shot, 1 trapped/snared, 1 vehicle collision, 1 euthanized at depredation site. A total of 48 wolves were found dead in Wisconsin and included death from the following: 5 disease, 1 other wolves, 7 shot & snared, 9 vehicle collisions, 22 euthanized at depredation sites, and 3 unknown. Mange caused most mortality from disease and was detected on 8 of 28 wolves handled in 2004. Reports of wolf observations were received from 44 Wisconsin Counties. Forty-three cases of wolf depredation on domestic animals occurred during the study period, and included death of 31 cattle, 7 sheep, 2 horses, 15 dogs, plus 1 calf and 2 dogs were injured. Twenty-four wolves were live-trapped from 12 farms, and 20 were euthanized, plus nonlethal methods were used on many farms. Various other strategies for implementing the 1999 Wisconsin Wolf Management Plan were also conducted during the period.

BUREAU OF ENDANGERED RESOURCES
Wisconsin Department of Natural Resources
P.O. Box 7921
Madison, Wisconsin 53707
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Box 7921
Madison, Wisconsin 53707

RECOVERY OF THE TIMBER WOLF
PERFORMANCE REPORT

1 July 2004 - 30 June 2005

Prepared by Adrian P. Wydeven and Jane E. Wiedenhoeft

Job: 106.1 Wolf Management Zones
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Timber or gray wolves (*Canis lupus*) were listed as Endangered in the Great Lakes region in 1967 and 1974 by the U.S. Fish and Wildlife Service (U.S. Fish and Wildlife Service 1992). The State of Wisconsin listed wolves as Endangered in 1975, reclassified them to Threatened in 1999, and delisted wolves to Protected Wild Animal on August 1, 2004. The Wisconsin Department of Natural Resources (WDNR) has monitored wolves since 1979. A recovery plan with a reclassification goal to Threatened status of 80+ wolves was completed in 1989 (Wisconsin DNR 1989), and a management plan was completed in 1999 (Wisconsin DNR 1999). The management plan sets a state delisting goal of 250 wolves outside of Indian reservations, and a management goal of 350 wolves outside of Indian reservations. At the management goal, government trappers may conduct proactive population control activities, and public harvest of wolves may be considered when wolves are federally delisted. The plan included 14 management strategies that represent the general outline of this report.

The 1992 Federal Recovery Plan for the eastern timber wolf established reclassification goals of 80+ wolves for 3 years in Wisconsin, and a delisting goal of 100+ wolves for 5 years for Wisconsin and Michigan (U.S. Fish & Wildlife Service 1992). Federal delisting also required a stable population of 1251 to 1400 wolves in Minnesota, and approved management plans for each state. The Minnesota wolf population was 3020 wolves in 2004 (Erb and Benson 2004). In 2005, Michigan and Wisconsin shared over 830 wolves, and had exceeded the 100+ threshold for 12 years. On April 1, 2003 the U.S. Fish and Wildlife Service reclassified wolves to Threatened in Wisconsin and Michigan (Minnesota has been listed as Threatened since 1978), and other states in the Eastern Distinct Population Segment (EDPS). On July 16, 2004 U.S. Fish and Wildlife Service began the process to delist wolves, but on January 31, 2005 a federal district court invalidated the 2003 reclassification process and wolves in Wisconsin and elsewhere (except Minnesota) were re-listed as endangered.

Personnel and funding

Funding for wolf conservation activity in Wisconsin was from the following: Federal Aid in Wildlife Restoration Project W-154-R; U.S. Fish and Wildlife Service, Endangered Species Grants; funds from the Nicolet-Chequamegon National Forest; Wisconsin Endangered Resources Fund (tax check-off and license plate); State

Wildlife Grants program; Timber Wolf Alliance (TWA); Timber Wolf Information Network (TWIN); USDA-Wildlife Services research funds (John Shivik); funds from research grant for Thomas Gehring, Jason Hawley, and Shawn Rossler at Central Michigan University, funds for research by Ellen Heilhecker at University of Wisconsin-Steven Point, Defenders of Wildlife, National Wildlife Federation , and donations from private individuals.

Adrian Wydeven was the ecologist in charge of the project, and was assisted by project wolf technicians Ron Schultz, Sarah Boles and Jane Wiedenhoeft. DNR pilots conducting aerial monitoring of collared wolves included: John Bronson, Joe Sprenger, Mike Weinfurter, Phil Miller, Paul Anderson, Dan Cardinal, and Bob Clark. Other DNR personnel that assisted extensively on wolf monitoring included Dick Thiel, Ellen Heilhecker, Wayne Hall, Kerry Beheler, Dr. Julie Langenberg, Nancy Businga, Michele Windsor, Randy Jurewicz, Ken Jonas, Greg Kessler, Todd Naas, Bruce Bacon, Rich Wissink, Linda Winn, and Mary Singsime. Buck Follis with the USDA-Wildlife Services conducted trapping of wolves for monitoring. Dead radio-collared wolves were necropsied by Dr. Nancy Thomas and Dr. Valerie Bochsler and others at the National Wildlife Health Center in Madison, and wolf necropsies were coordinated through Dr. Grace McLaughlin. Noncollared dead wolves were necropsied by the DNR Wildlife Health Team. Live trapping and field investigations of wolf depredations were conducted under the supervision of Dave Nelson and district supervisors Bob Willging and Charles Lovell of USDA-APHIS-Wildlife Services, as well as assistant district supervisor, Dave Ruid and the many wildlife specialists. Lisa Naughton (University of Wisconsin-Madison) and Adrian Treves (Wildlife Conservation Society) conducted attitude surveys toward wolves in Wisconsin. Jason Hawley and Shawn Rossler under Dr. Thomas Gehring of Central Michigan University are conducting research on shock collars as a means of reducing wolf depredation. Over 86 volunteers conducted winter track surveys across northern and central Wisconsin.

Job 106.1 WOLF MANAGEMENT ZONES

Four wolf management zones were created in the 1999 wolf management plan (Figure 1). Wolf populations and summary of wolf management activities are discussed for each zone below.

Zone 1 (18,384 square miles) represents the northern forest wolf range in Wisconsin, and in winter 2004-2005 consisted of 364 to 392 wolves including 91 packs and at least 11 loners. Packs occurred in all of the 21 counties in the zone, and public reports of wolf observations were received in 20 counties. Fifteen dogs were killed and 2 injured in 14 cases in 5 counties. Livestock depredation included 26 cattle, 7 sheep, and 2 horses on 20 farms in 8 counties. Fourteen wolves were trapped and 12 were euthanized on 7 farms. Average deer density in winter across the zone was 22 deer per square mile (range 9 to 32 deer per square mile), and was above the goal of an average of 19 deer per square mile. Wolf packs occupied 5557 square miles of the zone at a density of about 1 wolf per 15 square miles.

Zone 2 (4,521 square miles) represents the central forest wolf range, and contains 42 to 44 wolves in 11 packs and at least 1 loner in winter . The zone contains portions of 10 counties, but consists mainly of 7 counties that all contained packs. Public reports of wolf observations were received from 7 of these counties. A depredation occurred on a calf in Marquette County, the first livestock depredation recorded in the zone. One wolf was trapped and euthanized on the farm. Average deer density in winter in the zone was 29 deer per square mile (range 24 to 30 deer per square mile); the goal for the zone is an average density of 27 deer per square mile. Wolf territories occupied 346 square miles of the zone at a density of about 1 wolf per 12 square miles.

Zone 3 (~18,000 square miles) represents wolf dispersal habitat and marginal wolf habitat in areas of mixed forest/farmland across central and southwest Wisconsin and includes portions of 33 counties. This area was not expected to be important wolf habitat, and was not expected to support many packs. In winter 2004-2005 at least 19 wolves occurred in the zone, mainly in areas near zones 1 and 2, and included 6 packs and 2 loners. Packs were small and consisted of 2-4 wolves. Reports of wolf observations were received from at least 9 counties. Twelve wolves were found dead in the zone; mostly wolves euthanized at depredation sites and vehicle collisions; dead wolves were from Oconto, Barron, Marquette, Rusk, Monroe, Jackson, Marathon, and Burnett Counties. Ten cattle were killed at 8 farms in 6 counties in the zone, and 9 wolves were trapped and euthanized on 4 of the farms. Wolf packs covered about 250 square miles in the zone, and occurred at an average density of 1wolf per 16 square miles in occupied range.

Zone 4 (~16,000 square miles) represents portions of southern and eastern Wisconsin, and includes 28 counties in portions of the state that are mostly agricultural and urban areas. No packs were detected in the zone. Reports of wolf observations were received from 11 counties in the zone. No wolves were found dead in the zone. No verified reports of wolf depredation were received in the zone.

JOB 106.2 POPULATION MONITORING AND MANAGEMENT

Thirty-one wolves were live-captured and released back into the wild in 2004, and 22 were fitted with radio collars (Table 1). Wolves were captured in 22 different packs and collars were fitted on wolves in 18 packs. Collars were not placed on smaller pups or pups captured and released by USDA-Wildlife Services at depredation sites prior to August 1 (after August 1, pups at depredation sites were euthanized). Captures included 9 adult males (mean 79.3 lbs. STD 8.9, range 59 to 100 lbs.), 8 adult females (mean 67.1 lbs. STD 8.1, range 56 to 84 lbs.), 1 yearling male (60 lbs.), 2 female yearlings (both 60 lbs.), 6 male pups (range 31 to 48 lbs. for 4), and 5 female pups (range 31 to 45 lbs. for 4).

A total of 64 wolves were monitored during the study period (Table 2). Sixty-three wolves occurred in 46 packs or as loners in Wisconsin, and one wolf was found in a Minnesota pack. A total of 11 radio collared wolves died during the period, signals were lost on 7, and 1 wolf slipped its collar. Wolves monitored in 2004-2005 included, 28 adult males, 28 adult females, 2 yearling males, 1 yearling female, 3 pup males, 1 pup female and 1 wolf of unknown status. Distribution of main areas used by collared wolves included 50 in Zone 1, 6 in Zone 2, 7 in Zone 3, and 1 in Minnesota.

Mean winter home range for 31 wolves with at least 20 radio locations was 38.4 mi^2 and for 27 adults with 20 or more radio locations was 37.0 mi^2. Average home range was 42 mi^2 in Zone 1, 31 mi^2 in Zone 2, and 27 mi^2 in Zone 3. Winter home range area ranged from 11 mi^2 for 446F (adult female) who had recently joined the Tranus Lake Pack, to 104 mi^2 for 505F (adult female) of the Bootjack Lake Pack.

Dispersing Wolves

Wolf 446F, was captured in the Casey Creek pack of northern Douglas County as an adult female on 13 June 2002. She began to disperse in winter 2003, and over the next year occupied 3 home range areas, until she joined the Tranus Lake Pack in northern Washburn County after 13 July 2004, about 37 miles south of her original home range.

Wolf 462M, was captured as an adult male in the Black Lake Pack in Sawyer County on 1 June 2003. After 9 November 2004, 462M began to spend time in southeast Sawyer County and western Price County as much as 26 miles to the south. During winter and spring, he returned to the Black Lake Pack several times, but also roamed over a larger area in Sawyer, Price and Ashland Counties.

Wolf 474M, was captured as an adult male in the Dunbar Pack of northern Marinette County on 19 May 2003. In early 2004, he began an extensive southward and westward move, and spent much of the summer in northern Portage County 100 miles to the southeast. After 21 September 2004, he started heading back north, and settled into the Oconto River Pack with wolf 452F after 5 October 2004, 52 miles to the northeast. Wolf 474M seemed to remain in the Oconto River area after wolf 452F was killed on 2 March 2005.

Wolf 479M, was captured as a pup male in the Ranger Island Pack of northern Lincoln County on 23 August 2003. He dispersed from his territory in late March 2004, at 11 or 12 months old, and traveled westward through Price, Taylor and Rusk county, and spent time in the Green Creek and Kidrick Swamp Packs. He was last located near Sheldon in Rusk County, 12 October 2004, and 53 miles west of his original home.

Wolf 480M, was captured as an adult male in the Wildcat Mound Pack of Jackson County on 28 August 2004. He was not monitored for a month and a half, and was located in an area east of Black River Falls, and west of the Wildcat Mound area from 10 October 2004 through 15 February 2005. After this last date, he dispersed west and was found shot to death in western Jackson County, 24 miles to the west 25 February 2005.

Wolf 496 & 512, were captured as an adult male in the South Empire Pack on 9 September 2004, and as an adult female in the South Empire Pack on 7 September 2004, respectively. The two joined together to form a new territory in Fall 2004. The 2 wolves were detected together on 14 December 2004, and remained together for the rest of the winter, and occurred east of the North Empire and west of the Moose Lake Pack.

Wolf 509F, was captured as a female pup in the Spring Creek Pack in central Price County on 26 October 2004 by a coyote trapper. She remained in the Spring Creek territory until 16 February 2005 and after that date, at about 10 months old, began to disperse to the north and west. She was last located near Exeland in Sawyer County, 50 miles to the west on 14 March 2005 when she lost her collar.

Wolf G994M, was captured as an adult male in the Ranger Island Pack of Lincoln County on 19 June 2003, but his signal was lost from the pack after 4 February 2004. He was again detected west of Antigo in Langlade County on 27 July 2004, 32 miles to the east, but was lost again after this location.

Wolf 279F, was captured as a yearling female in the Stuntz Brook pack in Washburn County on 13 May 1998. From mid-November 1998 through spring 1999 she spent time in various areas up to 45 miles west of the Stuntz Brook territory. Her last location was near the Kettle River in Minnesota on 24 May 1999. Her signal was lost after that. She was captured on 25 October 2004 by USDA-Wildlife Services during depredation trapping in Pine County Minnesota and was euthanized.

Wolf M5203M, was captured as a yearling male on 1 November 2003 in Baraga County Michigan, but his collar was chewed off prior to 15 December 2003. The wolf was caught as a depredator in Barron County, Wisconsin on 6 August 2004, 194 miles to the southwest. He was euthanized at the site. He may have joined the Blues Hills Pack.

Wolf - Marathon County Female, was found dead in eastern Marathon County on 25 March 2005. Her location was east of the area roamed by Wolf 454F. The yearling female was found dead about 24 miles south of the nearest pack.

Wolf - Lake County Male, was killed by a vehicle in northern Lake County, Illinois and 1.2 miles south of the Kenosha County, Wisconsin border on 17 February 2005. The wolf was killed next to the Fox River, and perhaps had followed the river from the north in Wisconsin. The nearest wolf pack to this location was 152 miles to the northwest in the Necedah National Wildlife Refuge. A wolf was also killed in north central Illinois in Marshall County in fall 2002.

Wolf Count Summary

Through radio telemetry monitoring of radio collared packs, snow tracking of non-collared packs, and public and agency reports of wolf observations, a total statewide count was obtained of a minimum of 425 to 455 wolves in winter 2004- 2005 (Table 3). Wolves occurred in at least 108 packs and 14 occurred as loners. The count will probably need to be re-adjusted later, because depredations were detected from at least 2 areas where active packs were not known to exist. Eleven to 13 wolves occurred on Indian reservations, thus the count outside Indian reservations was 414 – 442, and the population was at least 64 wolves above the population goal. This was also the 4th year in a row that the wolf population exceeded the state delisting goal of 250 wolves outside Indian reservations.

The wolf count in 2005 was 14% higher than in 2004. The state wolf population increased at an average annual rate of 20% from 1985 to 2002, but increased at an average annual rate of 9% from 2002 through 2005. The slower rate of growth indicates that the wolf population may be approaching the carrying capacity.

Average pack size was 3.8 to 4.1 wolves per pack in winter 2004-2005 (range 2 to 11 wolves). Wolf territories covered 6373 mi^2 at a density of 1 wolf per 14.2 – 15.2 mi^2 . DNR pilots observed and detected 145 wolves on 1104 radio locations, and included members of 37 Wisconsin packs or territories. Non-collared packs were counted along 2774.2 miles of snow track surveys driven by Wisconsin DNR trackers and 4939.0 miles tracked by volunteers. Additional reports of wolf observations were received by general public and conservation agency personnel that were used to direct surveys, or supplement other surveys (Table 6).

An estimated 118 to 192 pups were detected alive in packs during the winter surveys. Using a midpoint of 155 pups present in later winter 2004-2005, and potentially 95 breeding packs in 2004, an estimated 31% of pups had survived to mid or late winter. Pup survival rates were about 32% in northern Wisconsin and 26% in central Wisconsin. At least 24 potential packs (25%) had no surviving pups by late winter.

A total of 48 wolves were found dead in Wisconsin during the study period (Table 4). These included 9 wolves actively monitored in Wisconsin, and 2 actively monitored that died in adjacent states. Among the 11 actively radio monitored wolves, mortality included 3 (27%) disease (mange), 1 (9%) other wolves, 4 (36%) illegal shootings, 1 (9%) illegal trapping/snaring, 1 (9%) vehicle collision, and 1 (9%) euthanized at depredation site. Overall mortality for 48 wolves found dead in the state included, 5 (10%) disease (mange), 1 (2%) other wolves, 6 (12%) illegal shooting, 1 (2%) illegal trapping, 9 (19%) vehicle collisions, 1 accident (2%), 22 (46%) euthanized at depredation site, and 3 (6%) died from unknown causes. The depredation site mortalities included 1 wolf that died in a trap, but was listed with euthanized total because it would have been euthanized.

Among the 48 wolves found dead in the state, 12% died from natural causes, whereas among the actively collared wolves 31% died from natural causes, which is similar to the pattern of long-term mortality in Wisconsin wolves (Table 5). Overall the percentage of human caused mortality verses natural mortality has been running at 55% and 45% among radio collared wolves. Wolves euthanized at depredation sites was the most common mortality in the overall sample (46%), but continues to be less than 10% among collared wolves. This will become a more important mortality factor for wolves in agricultural landscapes, because 9 wolves were trapped and euthanized in Zone 3, but only 19 wolves were detected in that zone over winter. Yet in Zone 1 with 364 to 392 wolves during winter, only 12 wolves were trapped and euthanized at depredation sites.

Statewide Wolf Distribution

Reports were received of 274 reports of wolf observations from private citizens and agency personnel from 44 Wisconsin counties (Table 6). Only "probable" and "possible" reports are listed, but probably include some mis-identifications. The report of observations was similar to the previous study period in 2003-2004 (272), but considerably less than 2002-2003 (372 observations). Highest reports were for the following counties: Iron (28), Marinette (25), Price (25), Ashland (21), and Vilas (19). Reports received included 196 in Zone 1, 17 in Zone 2, 32 in Zone 3, and 29 in Zone 4. Reports in Zone 4 are more likely to include coyotes, dogs, or possible wolf dog hybrids. In recent years lone dispersing wolves have been killed in Zone 4, and although none were killed there during the study period, a wolf was killed in Lake County Illinois (see above), only 1.2 miles from the Kenosha County, Wisconsin border. This wolf probably traveled through portions of Zone 4 in Wisconsin.

JOB 106.3 WOLF HEALTH MONITORING

Disease testing was conducted on 28 wolves in 2004, and 28 wolves were examined for sign of mange (Table7). Positive titers were detected for 8 of 9 for Canine Parvovirus, 4 of 9 for Infectious Canine Hepatitis, 3 of 9 for Canine Distemper virus, 20 of 23 for Ehrlichia equi, and 16 of 28 for Lyme Disease. Infectious Canine Hepatitis and Canine Distemper appeared more prevalent in central Wisconsin.

Eight of 28 wolves (29%) examined showed sign of mange, but appeared more prevalent in central Wisconsin, where 4 of 5 showed sign, compared to 4 of 23 in northern Wisconsin. Rates of mange were similar to 2003 (30%), but more than 2002 (16%). Mange represented 27% of mortality among actively collared wolves. During a 5 week period in December 2004 and January 2005, the alpha male and female of the Moose Lake Pack in Douglas County, and the alpha male of the adjacent Truck Trail Pack all died of mange. Other areas with mange related mortality included Bayfield and Vilas County, but in general the disease was spotty in its distribution and did not appear to slow growth of the wolf population.

JOB 106.4 HABITAT MANAGEMENT

In April 2004, the US Forest Service completed a new management plan for the Chequamegon- Nicolet National Forest, including maintaining areas of low road density, and protecting den and rendezvous sites for wolves. A meeting was attended and comments were sent to the U.S. Forest Service and U.S. Navy over the closure of the ELF (extreme low-frequency) transmission line, to assure the wolf habitat would be protected. The Navy announced the closure of the facilities in 2004. Wolf abundance and distribution information was shared with forest managers and administrators through progress reports.

The project ecologist met with US Fish & Wildlife Service and an Arrowhead Transmission Line consultant on 12 July 2004 to discuss mitigations and management of transmission line construction in northwest Wisconsin to reduce impact on wolves.

JOB 106.5 WOLF DEPREDATION MANAGEMENT

Forty-three cases of wolf depredation occurred during the 2004-2005 study period (Table 8). Depredations included 14 cases of dog depredation including 15 dogs killed and 2 injured. Three dogs were killed and 1 injured near homes, and 12 dogs were killed and 1 injured in hunting and hunting training (bear and bobcat hunting). Twenty-nine cases of depredation occurred on 29 farms resulting in death of 31cattle (28 calves), 7 sheep, and 2 horses (1 foal), as well as injury to 1 calf. Eighteen packs (17%) were involved in depredation on livestock, 5 packs were involved in depredation on dogs (5%), and 1 (1%) pack caused depredation on both dogs and livestock. The Shanagolden Pack of Ashland County killed 9 of the dogs killed by wolves.

USDA-Wildlife Services conducted trapping on 25 farms, and trapped 24 and euthanized 22 wolves on 12 farms. Captures on individual farms ranged from 1 to 4 wolves. Two pups captured before 1 August 2004 were released

back into the wild. USDA-Wildlife Services also provided non-lethal devices such as flashing lights, fladry, and noise makers to farmers to reduce wolf depredation risk, especially farms where wolves had only threatened depredations.

JOB 106.5 WOLF EDUCATION PROGRAMS

During the study period the project ecologists gave 23 talks to 1005 people. Other biologists and technicians giving talks included the following (talks/people): Dick Thiel (7/674), Ronald Schultz (5/194), Gary Dunsmoor (4/70), Michelle Hefty (6/192), Mike Foy (1/30), Rick Weide (1/50), Rick Wissink (1/40), Sarah Boles (2/40), Jane Wiedenhoeft (3/65), Dan Eklund (USFS, 1/15) , Dave Ruid (USDA-WS 5/289), for a total of 36 talks to 1659 people. Fifteen speakers with the Timber Wolf Alliance (TWA) gave 74 talks to 3404 people in Wisconsin. Talks by DNR Wolf Program personnel included training for 27 TWA volunteers at one workshop, 130 volunteer and agency trackers at 4 sessions, and 15 regional tracking coordinators at 1 session. Wolf program personnel and volunteers handed out information and answered questions from a booth at the Wisconsin Citizen Based Monitoring Conference (~150 people). The WDNR, US Forest Service and other agencies cooperated with TWA to distribute over 6000 educational wolf posters in Wisconsin during Wolf Awareness Week in October 2004. The wolf project ecologist attended 3 meetings with TWA to coordinate wolf educational activities in the state. Media contacts by the project ecologist included, 79 interviews/contacts, including 43 newspaper, 23 radio, 7 TV, 3 magazine, 2 website news, and 1 book contact . News releases were developed on dog and livestock depredation, closure of coyote season during deer hunt, federal delisting hearings, state wolf depredation payment hearings, re-listing of wolves as endangered, new federal permit for wolf depredation management, and new population count. Three progress reports and two annual reports were produced and distributed and placed on the DNR Wolf Web site: http://dnr.wi.gov/org/land/er/publications/wolfreports/, and DNR Wisconsin Wildlife Survey reports website, http://dnr.wi.gov/org/land/wildlife/harvest/harvest.htm . The DNR Wolf web site also contained information on wolf depredation on farms, reduction of conflicts with hunting dogs, updated wolf distribution maps, and information on the Volunteer Carnivore Tracking program.

JOB 106.7 LAW ENFORCEMENT

Project personnel assisted WDNR conservation wardens and USFWS special agents in investigating 7 illegal kills by collecting carcasses and other evidence, providing background information, transporting carcasses, and preparing news releases. A suspect was apprehended for illegally snaring a wolf on the Menominee reservation and the case is moving along. Investigation continued on other cases.

The coyote closed area during the firearm deer season was monitored during the hunting season. A news release was issued on the closed season for coyotes and protective status of wolves prior to the deer hunting season. Extra flights were flown on radio collared wolves to detect possible shootings.

JOB 106.8 INTERAGENCY COOPERATION AND COORDINATION

The Wisconsin Wolf Science Committee met 6 July 2004, 3 November 2004, and 24 May 2005 to discuss wolf payment rules, wolf plan updates, and other wolf management issues. The wolf science committee included staff from Wisconsin DNR, Wisconsin Department of Agriculture, Trade & Consumer Protection, University of Wisconsin Extension, U.S. Forest Service, USDA-Wildlife Services, Great Lakes Indian Fish and Wildlife Commission (GLIFWC), U.S. Fish and Wildlife Service, Wisconsin County Forests, and a private veterinarian.

Meetings were held with the Wisconsin Wolf Stakeholders on 16 October 2004, and 16 April 2005 to discuss wolf depredation payments, the state wolf plan, and other wolf management issues. The Wolf Stakeholders consisted of a diverse group of interested parties including hunting groups, environmental groups, animal welfare groups, farm groups, tribes, educators, and private citizens.

Meetings were held with WDNR biologists & technicians on 14 October 2004, and 15 April 2005, to review and plan survey work, and tabulate the wolf count. Persons involved in wolf trapping and handling in WDNR and USDA-WS met on 2 March 2005 to update training on chemical immobilization and handling of wolves. The project ecologist served on the Eastern Gray Wolf Recovery team, and this group met by conference calls on 18 October 2004 and 13 April 2005.

The Midwest Wolf Stewards met in Hinckley, Minnesota on 27-28 April 2005 to review wolf management and research among the 3 Great Lakes states. The meeting included involvement from Wisconsin DNR, Michigan DNR, Minnesota DNR, U.S. Fish and Wildlife Service, USDA-Wildlife Services, Michigan Technological Institute,

Central Michigan University, GLIFWC, National Wildlife Federation, Wildlife Science Center, Timber Wolf Alliance, Wildlife Conservation Society, and others.

The project ecologist gave presentations on Wisconsin wolf management at the Midwest Chapter of Native American Fish and Wildlife Conference at Lac du Flambeau to about 50 people on 14 September 2004, and spoke to 32 people at the Voight Task Force of Chippewa tribes at Mille Lac, Minnesota on 4 November 2004.

JOB 106.9 PROGRAM GUIDANCE AND OVERSIGHT

On 16 July 2004, a meeting was held by U.S. Fish and Wildlife Service and the Department of the Interior announced the start of the federal process to delist wolves in the Eastern Distinct Population Segment (the Dakotas to Maine) including Wisconsin, Michigan and Minnesota. Secretary of the interior Gail Norton made the announcement at the Wildlife Science Center of Forest Lake, Minnesota attended by WDNR secretary, Scott Hassett, Endangered Resources director, Signe Holtz and Adrian Wydeven, as well as officials from other states and the press. Public Hearings on federal delisting were held in Madison on 27 September (100 people), in Wausau on 28 September (50 people), and in Ashland on 29 September (130 people). A public comment period on the delisting proposal was conducted through mid November 2004. In general most people seemed in favor of delisting. On 31 January 2005, a federal district court in Oregon declared the 2003 reclassification of wolves as invalid, resulting in Wisconsin wolves being re-listed as endangered, and tabling the delisting process.

Several meetings were held with the Wisconsin Natural Resources Board (NRB) to develop new wolf depredation payment rules that included caps and restrictions on levels of payments. The project ecologist spoke to the NRB on wolf management on 27 October 2004. Request to hold hearings on the depredation payments rules were obtained from the NRB on 8 December 2004. Public hearings on the depredation payment rules were held on 15 February 2005 in Spooner (110 people) and Black River Falls (125 people), 16 February in Rhinelander (62 people), and 17 February in Madison (38 people) and Green Bay (62 people). Most people opposed restrictions on payments such as deductions, annual caps, and species caps; most people at hearings were bear hunters or farmers. Comments through the mail were more divided and included more people opposing payments for hunting dogs. Rules were adopted by the NRB on 27 April 2005, including payments for hunting dogs and livestock, but with several restrictions. In June the Wisconsin Assembly and Senate held hearings on the payment rules and sent them back to NRB to make them less restrictive. Rules were not finalized at the end of the study period.

Two meetings were held with the Wisconsin Stakeholders group on 16 October 2004, and 16 April 2005 to discuss depredation payments rules, wolf plan updates, and other wolf issues. Other public comment meetings on wolf management included a NRB listening session on wolves and other issues in Cable on 26 October 2004 (~ 60 people) and Sportsmen Forum in Minocqua on 14 March (200+ people). Negative attitudes toward wolves seem to be heating up with the increased wolf population.

JOB 106.10 VOLUNTEER PROGRAMS

Volunteer help was again used extensively on the wolf program. Twenty-seven volunteers were trained at a TWA workshop on 6-8 August 2004. Fifteen speakers gave 74 talks to 3004 people with TWA within Wisconsin. About 130 people attended 4 track training sessions for volunteer carnivore trackers, 15 people attended training for regional tracking coordinators, and 86 people surveyed 68 survey blocks, covering 4939 miles of snow-covered roads and trails. Volunteers averaged 3.8 surveys per block (~200 mi^2 area) covering 73 miles, and conducting 13.5 hours of tracking per block. During fall, 10 volunteers conducted hunter outreach in the field and made 286 contacts in Ashland, Bayfield, Iron, Oneida, Price, Rusk, Sawyer and Vilas Counties. Volunteers also assisted with wolf trapping, radio collaring, donations of radio collars, and howl surveys, as well as manning educational booths at sport shows and other events.

JOB 106.11 WOLF RESEARCH

The Wisconsin DNR cooperated on several research projects on wolves in the state.

Research was conducted on use of a Minnesota-type wolf survey (Fuller et al. 1992, Berg and Benson 2001, Erb and Benson 2004) in Wisconsin. The survey was conducted by Tim Van Deelen, WDNR & Univ. Wisconsin-Madison and Jane Wiedenhoeft (Wiedenhoeft et al. 2005). The intent of this survey was to collect reports of wolf observations and sign from all agency personnel that spent time in wolf areas during winter 2003-2004. These observations were used to construct maps of wolf distribution in the state. The survey used a sample of radio collared packs to determine average size of packs and size of territories. Preliminary results completed by Jane recently suggest that the Minnesota-type survey may over-estimate wolf numbers for Wisconsin about 2 times the

level detected in the more traditional intense surveys used in Wisconsin. The Minnesota type survey may be less suited for areas with fragmented and irregular distribution such as Wisconsin, but probably suitable when wolves occur in large contiguous blocks of land.

Lisa Naughton, Rebecca Grossberg, and Adrian Treves of University of Wisconsin–Madison, and Wildlife Conservation Society, conducted an attitude survey of Wisconsin residents on wolf depredation payments and management. Results of this recent survey will be published in the near future, and portions will be reported in an appendix update to the wolf management plan.

GIS analysis was conducted on assessing wolf habitat in Wisconsin. Kerry Marten is conducting research on habitat use of dispersing wolves in Wisconsin with Lisa Naughton, and Adrian Treves. Kerry hopes to build on GIS analysis of wolf pack habitat previously conducted in Wisconsin (Mladenoff et al. 1995, 1999). Jane Wiedenhoeft used historical radiolocation data to map wolf pack territories from 1980-2005 (Wiedenhoeft & Wydeven 2005). Analysis of changes in wolf pack territory size and distribution over time will follow. Dave Mladenoff at University of Wisconsin-Madison, worked on updating GIS assessment of wolf habitat with Jane Wiedenhoeft to look at some of the newly colonized areas in the late 1990s and into the 2000s. Annie Seeger White, also at UW, began work on GIS assessment of den sites in Wisconsin.

Ellen Heilhecker and Eric Anderson of University of Wisconsin-Stevens Point completed a study on pup movements and mortality factors in central Wisconsin (Heilhecker 2003), and Ellen is working on completion of the thesis.

Jason Hawley and Thomas Gehring of Central Michigan University completed research testing shock collars on wolves as a tool for reducing wolf depredation (Hawley 2005). They have been testing dog shock collars on wolves as a means for altering movements and behavior to discourage depredation on livestock. Earlier work by WDNR on use of shock collars for wolf depredation reduction was published (Schultz et al.2005). Shawn Rossler of Central Michigan began research on a follow-up study, and hoped to do more testing in actual farm depredation situations.

Research was also conducted on resource selection by elk on the spatial relationship of their home range areas in relationship to resources at various scales, and distribution of wolf packs. A paper was prepared and published on the research and suggests that the presence of wolf pack territories influence movement and habitat selection by elk (Anderson et al. 2005).

Trophic interactions with wolves and vegetation were examined, and findings were prepared for publication and work continues at getting this research published (Anderson et al. submitted). Forb species diversity and biomass was highest in cedar swamps in the center of wolf territories.

The Wisconsin DNR wolf workers Adrian Wydeven, Randy Jurewicz, Ronald Schultz, and Jane Wiedenhoeft are continuing ongoing research with the National Wildlife Health Center (NWHC) in Madison with Grace McLaughlin, Valerie Bochsler, and Nancy Thomas. Most wolves found dead in the state have been examined by the Center. Since 2004, it was decided that with the greater volume of wolf mortalities, the NWHC would focus on radio collared and federal legal cases, and the WDNR Wildlife Health Staff will necropsy the other wolves.

John Rafferty, Ph. D. candidate at University of Illinois-Urbana/Champaign, completed research on impact on wolves from shrinking suitable habitat due to future human developments across portions of northern Wisconsin (Rafferty 2005). John has researched an extinction threshold model to examine how wolves may respond to shrinking suitable habitat.

Research with Paula Holahan (University of Wisconsin), Nancy Thomas, and Adrian Wydeven continued on osteopathology of wolves that have died in Wisconsin. Attempts will be made to correlate pathological conditions on skeletons of wolves with necropsy results and field conditions. Paula Holahan also investigated structural and anatomical differences between wolves and wolf-dog hybrids.

Dorothy Ginnett of the University of Wisconsin-Stevens Point conducted research on heartworm in wolves and other canids with Jerold Thies. Heartworm occurrence was examined by serological tests and necropsies of dead wolves and other canids.

Timothy Van Deelen, new assistant professor at University of Wisconsin – Madison, will begin research with graduate student Lizzy Berkley on use of fatty acid signatures to determine diet of wolves in Wisconsin (Iverson et al. 2004).

John Shivik with USDA-Wildlife Services began a new research project in the spring to investigate cause of death of “missing calves”, and determine the role of wolves and other predators in the death and disappearance of these animals.

A presentation was prepared on wolf depredation on livestock for a symposium on wolf depredation in North America at the Wildlife Society meeting in Calgary, Alberta on 22 September 2004.

The wolf program produced several other reports during the study period. The Wisconsin Wolf Population in 2003-2004 was published in the Wisconsin Wildlife Surveys (Wydeven and Wiedenhoeft 2004). Progress reports on wolf population monitoring were produced in fall, end of year/mid winter, and spring.

JOB 106.12 WOLF-DOG HYBRID AND CAPTIVE WOLVES

Nine cases of suspected wolf-dog hybrid incidents were reported during the study period (Table 9). These cases probably represent only a portion of wolf-dog hybrid incidents, because not all of these were reported to the WDNR or Wolf Program. Wolf-dog problems occurred in 9 counties scattered across the state. One case involved hybrids being aggressive toward humans, 3 cases of aggression toward dogs, 3 roaming near people in residential areas, and 2 were found dead that initially were investigated as wolf killings.

Regulations still do not exist for regulating wolf-dog hybrids, and it has not been determined whether the Captive Wildlife Regulations of 2002 may be used to regulate wolf –dog hybrids.

JOB 106.13 WOLF SPECIMEN MANAGEMENT

Since a meeting held at the National Wildlife Health Center (NWHC) in Madison on 16 June 2004, necropsies on dead wolves have been split between the staffs at the NWHC and WDNR Wildlife Health Lab. The NWHC conducted necropsies on radio collared wolves and those considered for federal cases, the WDNR necropsied others including euthanized depredators, road kills, and other noncollared wolves found dead in the wild. After necropsies, specimens were made available to research, educational organizations, tribal offices and WDNR offices. Randy Jurewicz continued to maintain a list of groups interested in wolf specimens. Wolf specimens handled, by WDNR regions, included 37 in the Northern Region, 6 Northeast Region, and 5 West Central Region.
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JOB 106.14 ECOTOURISM

Workshops by Timber Wolf Alliance and Timber Wolf Information Network continued to bring people into wolf range near the Drummond and Tomahawk areas to visit and explore wolf habitat. Most of these people also spent money in the local community. Wolf programs were also given at the Sandhill Wildlife Area, Cable Natural History Museum, State Parks & Forests, and National Park Service, and these programs were part of the attractants for people to visit these areas. On 10 July 2004, a Natural Resource Foundation tour of wolf habitat was given to 40 people, and included dinner at a local supper club as part of the tour in the Glidden area of Ashland County. The WDNR continued to support reasonable ecotourism involving wolves and continued monitoring of ecotourism impact on wolves.

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